Frequently Asked Questions: Electricity

What are the sources of electricity used by consumers in Washington?

Hydroelectricity is our main electricity source, accounting for 66% of electricity consumed in the state in 2004. Electricity generated from coal accounted for 18% of electricity used. There is one coal-fired power plant in the state. Some coal-fired power is purchased from plants located in other states like Wyoming and Montana. Natural gas (9%) and nuclear power plants (6%) are the primary sources for the remainder of the electricity. Other renewable sources accounted for less than 1½% of the electricity purchased. Biomass (0.7%) is the largest renewable generation source followed by wind generation (0.4%), although prior to 2001 no electricity from wind generation was consumed in Washington.

One approach for estimating "Washington's electricity sources" is the mix of generation purchased by utilities to serve customers in Washington State. Washington is part of an interconnected, regional bulk power system and utilities purchase electricity generated from a variety of sources throughout the region to serve consumers in Washington. Data for estimating the sources of electricity consumed in Washington is collected from the state's electric utilities for the Washington State Fuel Mix Disclosure Project.

See the Fuel Mix Disclosure data.
http://www.cted.wa.gov/portal/alias__cted/lang__en/tabID__539/DesktopDefault.aspx

Who delivers electricity to consumers in Washington?

Washington State has 63 electric utilities ranging from a few hundred customers to more than 800,000. Publicly owned utilities (PUD, municipal utilities, and cooperatives) provide electricity to more than half of Washington State's consumers. These utilities are accountable to locally elected boards rather than the state utility commission. Investor owned utilities serve most of the remaining electric utility customers. The Bonneville Power Administration and several other non-utility providers directly serve a small number of large commercial and industrial customers.

See the electric sales and revenue by utility spreadsheet
http://qa.cted.wa.gov/_CTED/documents/ID_2123_Publications.pdf

What is the generation mix for electricity generated in Washington?

Hydroelectric dams account for most electricity generated in Washington. In 2004, 70% was from hydroelectric dams while coal, natural gas, and nuclear accounted for most of the remainder. Electricity generated from non-hydro renewable sources such as biomass, wind, waste, and landfill gas accounted for less than 2% of the total.

Note. This response describes electricity generated in Washington State. This differs from electricity generated or purchased by utilities in Washington State for consumption by Washington consumers. Because the amount of hydroelectric generation varies depending on stream flow, the mix changes from year-to-year.

Why does hydroelectric generation capacity vary during different periods?

Hydro generation production varies depending on water flow on rivers. Drought conditions, low snow pack, or poorly timed run-off can lower hydro production. Generation capacity on the Federal hydro system was 10 to 20 percent above normal during a relatively wet period in 1996 and 1997, but dropped 30 percent below normal by late 2001. Hydro electricity serving Washington consumers, which includes a portion of Federal hydro generation plus other sources, dropped more than 30 percent from 2000 to 2001 as a result of drought conditions during this period.

What is the electricity flow into and out of the region?

Washington State is part of the Northwest Power Pool, which includes Washington, Oregon, Idaho, and Utah, most of Montana and Nevada, and part of Wyoming. The Pool has historically been a net exporter of power. The region imported power during the winter of 2000/2001. During 2003 and 2004 the region exported modest amounts of electricity in the summer and imported equivalent amounts in the winter. During this period imports exceeded exports. Washington State generators produce more electricity than is needed in the state. In 2004 power plants in Washington generated 24% more electricity than consumed in the state.

Are there adequate supplies of electricity to meet future needs?

The addition of electricity generation capacity in California and the Northwest in the last several years along with reductions in electricity demand has resulted in a much improved supply situation on the West Coast and Northwest. The Northwest Power and Conservation Council projects adequate generation capacity through 2010, but significant changes in economic activity and electricity load growth could change this situation.

What new electricity generation capacity is being added in the region?

Over 70 percent of the new generation added since 1998 in the Northwest is natural gas-fired. Most of the remaining new capacity is wind-powered generation. Natural gas-fired power plants account for over 80 percent of the new generation in our state. The remaining new generation is a mix of wind, biomass, and diesel generators.

Who consumes electricity in Washington?

In 2004 the residential sector used the most electricity, accounting for 39% of the total, with the commercial sector using for 35%, and the industrial sector 27%.

How do recent electricity prices compare to historical prices?

Electricity prices in Washington were relatively stable during the 1980s and 1990s. This began to change in 2000. Average retail residential and commercial electricity rates increased about 25 percent as a result of the West Coast electricity crisis in 2001. Industrial prices increased over 60 percent, but declined in 2004, losing about half of the gain.

What factors influence electricity price increases?

The main contributing factors of price increases or short-term price volatility are:

1. Higher prices for natural gas, which powers much of the new electric generation on the West Coast.
2. Drought conditions or low snow packs that reduce hydroelectric generation.
3. Spikes in electricity demand due to hot summer weather and the demand for air conditioning.
4. Higher than expected electricity demand growth that exceeds capacity additions. This can result from strong economic and population growth.

How do electricity prices in Washington compare to other states?

In 1999 our state had the lowest state average electricity prices for residential and industrial consumers and the next to lowest commercial prices. By 2003, a significant number of states had lower commercial and industrial electricity prices while our residential price ranking remained about the same.

Table 1: Washington State Ranking for Electricity and Natural Gas Prices

Electricity Prices

Sector	1999	2001	2003
Residential	*50*	*49*	*49*
Commercial	*49*	*47*	*38*
Industrial	*50*	*34*	*32*

Rank scale: 50 = lowest, 1 = highest, Source: EIA.